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ABSTRACT

Vygotskian theory suggests that maturation and learning are not mutually exclusive; rather together they constitute development and are thus dependent on each other and interactive. The concept of the zone of proximal development involves determining two developmental levels of mental functions for each learner--the actual and the potential developmental levels. According to this theory, a second level of measurement, determining what the learner can do with the assistance of others, might in reality be a better indicator of the mental development and potential of the learner than is the measurement of what a learner can do alone. A Vygotskian test of reading, writing, listening, or language learning should first consist of a measure of the actual developmental level of the learner. With this measure as a starting point, ways of offering assistance to the test taker can be defined. Forms of assistance such as word definitions, grammatical explanations, and verb forms could go toward the test taker's completion of items missed in independent testing. Individual zones of proximal development could be demarcated and used to place students in courses according to their abilities to benefit from the same type and level of instruction. (LMO)

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Vygotskian Theory and Language Testing

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Language test design, when it is not totally atheoretical with regard to learning theory or simply based upon psychometrics (statistical theories of the degree of interrelatedness among mental processes, e.g., reliability measures), is usually grounded in a psychological theory of learning first put forth by Binet around the turn of the century. This theory of learning maintains (a) that learning lags behind development; (b) that particular states of development are prerequisites for learning (a position greatly augmented by Piaget); and (c) that learning does not alter development but rather is dependent upon it and cannot therefore push development forward.

When this theory of learning forms the basis for test design, test designers focus on methods of determining the lowest threshhold of learning ability, that is, the place where a particular type of knowledge or information can first be learned. In addition, their goal in testing becomes identifying those learners who are at that particular steady state of development so that lessons can be devised which will follow from the level of development already attained. That is, according to this theoretical position, as maturation precedes learning and instruction must lag behind mental growth, all that a test needs to tell us about is what a student already knows.

We can all think of examples of tests that perform this function. In the City University of New York (CUNY), the competency tests given to entering students to determine whether or not they

are in need of remediation all focus on obtaining this type of information. The CUNY Writing Assessment Test (WAT), a fifty minute holistically graded argumentative essay, aims at determining which students can, on their own, write a minimally proficient essay; the CUNY Reading Assessment Test (RAT), a standardized reading comprehension test consisting of short passages and multiple choice questions on main ideas, details, and inferences, hopes to determine which students can read at least at a certain minimum level. These tests and tests like them attempt to identify those students who have reached a certain stage of development so that learning and instruction suitable for students who have reached a particular level of performance can be provided.

Vygotsky's work (1962; 1978), on the other hand, suggests that maturation and learning are not mutually exclusive; rather they together constitute development and are thus dependent on each other and interactive. Essential to this point is Vygotsky's concept of the zone of proximal development, the ZPD. What this concept entails is the determination of two developmental levels for each learner.

The first level, the one most current tests aim at discovering, Vygotsky has termed the actual developmental level. This is the level of development of mental functions that has been established because the learner has already completed certain developmental cycles.

Our current testing mechanism assumes that the measure of this level, what learners can do on their own, best indicates mental ability. In fact, any mediation during the task performance (the use of dictionaries or verb charts, answers to related questions

given by the test administrator, vocabulary clarification, grammatical explanations, collaboration with peers, explanations of cultural phenomena, additional time given to complete the task etc.) is thought to interfere with the accurate measurement of a student's mental development. Vygotsky (1978), however, suggests that such measurements of attained ability may in fact be misleading as they give us no information on the potential of the students.

As classroom teachers we have seen his point demonstrated in practice although we may not recognize it in theory. We have all had the experience of a class full of students all of whom received essentially the same scores on a competency test such as the CUNY WAT or the CUNY RAT. Yet almost immediately we recognized that some of the students seemed adequately prepared for the course, profited from our instruction and made progress while others seemed ill-prepared, made little, if any, progress and, at the end of the course, were essentially at the same place they were when the course began. Indeed, their exit performance on these same proficiency tests showed little, if any, change.

Vygotsky's suggestion is that a second level of measurement, that of what the learner can do with the assistance of others, might in reality be a better indicator of the mental development and potential of the learner than is the measurement of what a learner can do alone. He suggests that measurement should <u>begin</u>, not end, with the measurement of what learners can do on their own. His studies on children show that those with the same actual developmental level differ widely in their abilities to perform with the assistance or mediation of others. Students who share the same actual developmental level are not necessarily at the same stage of

development. As a result, their subsequent patterns of learning will also be quite different.

> Suppose I investigate two children upon entrance into school, both of whom are ten years old chronologically and eight years old in terms of mental development. Can I say they are the same age mentally? Of course. What does this mean? It means that they can independently deal with tasks up to the degree of difficulty that has been standardized for the eight year old level. If I stop at this point, people would imagine that the subsequent course of mental development and of school learning for these children will be the same....Now imagine that I do not terminate my study at this point, but only begin it. These children seem to be capable of handling problems up to an eight year old's level, but not beyond that. Suppose that I show them various ways of dealing with the problem. Different experimenters might employ different modes of demonstration in different cases: some might run through an entire demonstration and ask the children to repeat it, others might initiate the solution and ask the child to finish it, or offer leading questions. In short, in some way or another I propose that the children solve the problem with my assistance. Under these circumstances it turns out the first child can deal with problems up to a twelve-year-old's level, the second up to a nine-year-old's level. Now are these children mentally the same?
> When it was first shown that the capability of children with equal levels of mental development to learn under a teacher's guidance varied to a high degree, it became apparent that those children were not mentally the same age and that the subsequent course of their learning would obviously be different. (Vygotsky, 1978, pp. 85-86)

While Vygotsky's research concentrated on measurements of mental development and growth, it may have implications for diagnostic and competency testing. What he suggests is that in addition to assessing the actual developmental level of students, the testing situation should demonstrate to the test takers various ways of solving problems or rectifying errors and inconsistencies in their initial solo performances. That is, the test should be administered with some assistance from the instructor or test administrator. Then the students' abilities with mediation and

assistance could also be measured. He has termed this second level of measurement, the measurement with mediation, the potential developmental level.

But Vygotsky's theory does not simply advocate the replacement of one static measure with another, the replacement of the measurement of where a student is today without help with the measurement of a student's potential with the help of another. As his theory centers upon the Marxist concept of dialectical materialism holding that all phenomena are best studied as processes in motion and in change, it is the change in development that his studies sought to investigate.

Using both measures of development, actual and potential, Vygotsky arrived at his concept of the zone of proximal development, which he defines as

> the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers....The zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state. [emphasis added] (1978, p. 86)

The ability to determine this zone of proximal development could enable educators to delineate learners' future progress, to assess their dynamic developmental state. It might also allow us to place students who have the same potential, who share the same zone of proximal development regarding language abilities, in the same course. Because the students would share the same range for potential development, they could be expected to meet the challenges of the course with adequate preparation. This would allow for the

development of lessons that would be of benefit to all the students in a course rather than just some. In addition, the instructor would be aware of both the learners' current abilities and also those aspects that "are in the process of maturation."

So what then should a Vygotskian test of reading or writing or listening or any other aspect of language learning look like? First of all, it should consist of a measure of the actual developmental level of the learner. It should be able to indicate what the learner already knows and can do. This is not an easy task in itself for, while many of our current tests attempt to do this, they are based on psychometric and linguistic theories rather than on theories of language acquisition and learning and thus fall far short of this goal. (see Pica, 1984, for a similar argument concerning the theories which support L2 syllabi.)

For example, most standardized reading comprehension tests consist of items designed to measure students' abilities on reading subskills such as decoding, identifying main ideas, making inferences, determining the meaning of words from context, deducing the author's tone, etc. It is assumed that the measurements of these skills assess reading ability. Yet the basis for this assumption is not psycholinguistic or educational, but rather psychometric. The importance of these skills is derived from factor analyses of items on other reading tests. Thus, these skills assume their importance as indicators of reading proficiency from their being assessed on other well-established reading tests. However, nowhere is there a theoretical basis, other than factor analysis, for including these subskills as measurements of reading competency.

So we must first work from our theories of reading and writing and speech toward a definition of what constitutes the reading process, the writing process, the process of oral communication. With this knowledge we can begin to construct tests that assess the learner's actual level of development.

With these measures of actual development as a starting point, we can begin to define ways of offering assistance to the test taker. For example, we could offer definitions of words, grammatical explanations, verb forms, background information, text structure information, assistance from peers, in short, whatever assistance we have. All of these forms of assistance should go toward the test taker's completion of the test items missed on the independent testing or toward the production of a final draft of a paper. We might even offer to solve items similar to those on the test so that the test taker might imitate us. After all, that is what the courses they will be attending will consist of: information and examples for exploration and imitation. Further, we would need to develop ways of classifying and tabulating the types and amounts of help given to test takers so that a uniform measure of assistance might be developed.

One might, at first, think that this assistance would give us a false measure, that students might be able to imitate things they will not be able to do on their own for quite some time. However, if we remember some of our own attempts at following the explanations of professors in calculus classes, organic chemistry classes, Chinese classes, automotive classes, etc., we will soon realize that imitation tasks are closely related to what we can already do. Who among us could figure out the thrust and trajectory

patterns needed to launch a spacecraft from simply watching an astrophysicist demonstrate how the pattern for a similar launch was calculated? Need we then worry that beginning level students might be able to imitate the action of reduced clauses following the verb "want" so long before these students would be able to produce such sentences on their own? No. The imitation tasks students can succeed on with our assistance are simply the tasks they have the background necessary to learn how to master but for which they have not yet acquired the requisite skills.

Once we have these measures of the learners' actual and potential levels of development, individual zones of proximal development could be demarcated and used for the placement of students in appropriate courses. Courses would no longer simply group together students with similar independent abilities but rather students who could benefit from the same type and level of instruction.

While I know of no existing language test that has been devised using Vygotsky's concept of the zone of proximal development as a measurement goal, I believe that efforts made in this direction could be fruitful. Such tests could help give us the information we actually seek when we evaluate our students, make our placement procedures reflect something other than what often appears to have been serendipity, and help us provide students with the language instruction that will ultimately benefit them most.

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